

Amendments to the Claims

Claims 1-19 (canceled).

20. (new) Method for producing a gas discharge vessel, comprising:

- (a) placing a gas discharge vessel to be filled with a gas filling in a chamber, the chamber having an inlet and an outlet;
- (b) sealing the chamber, introducing the gas filling into the chamber, the gas filling entering the chamber through the inlet and exiting the chamber through the outlet;
- (c) purging the chamber with the gas filling at superatmospheric pressure;
- (d) continuing purging the chamber with the gas filling at superatmospheric pressure while heating the chamber to seal the discharge vessel;
- (e) stopping the purging of the chamber once the discharge vessel is sealed; and
- (f) cooling the chamber.

21. (new) The method of claim 20 wherein the chamber is sealed via a vacuum channel which applies a vacuum to secure a metal cover.

22. (new) The method of claim 20 wherein the outlet of the chamber is connected to an inert gas collector.

23. (new) The method of claim 20 wherein after the discharge vessel is sealed, the chamber is purged with a gas which is less expensive than the gas filling.

24. (new) The method of claim 20 wherein the gas filling contains a Xe discharge gas, a buffer gas, and an inert gas having a Penning effect with reference to the discharge gas.

25. (new) The method of claim 24 wherein the gas filling contains a partial pressure of Xe in a range of 60-350 mbar at room temperature.

26. (new) The method of claim 20 wherein the discharge vessel is heated in an oxygen-containing atmosphere in the chamber before purging with the gas filling.

27. (new) The method of claim 26 wherein the discharge vessel is purged with an inert gas after heating in the oxygen-containing atmosphere and before purging with the gas filling.

28. (new) The method of claim 20 wherein the chamber is cooled by contact with a water cooled block.